

TAS 3083-14

T.H. 51

T.H. 94 TO T.H. 36

S.P. 6215, 6216

AUGUST 1968

*Ag. 1-67*

OFFICE OF  
TRANSPORTATION SYSTEM PLANNING

MINNESOTA HIGHWAY DEPARTMENT



## Office Memorandum

DEPARTMENT HIGHWAY

TO : Paul G. Velz  
Road Design Engineer

DATE: September 5, 1968

FROM : Leon F. Bergmann, Acting Chief  
Traffic Analysis SectionSUBJECT: TH 51; TH 94 to TH 36; SP 6215, 6216  
TAS 3083-14

The Traffic Analysis Section transmits this report in response to R. T. Peterson's November 30, 1967 request for the 1990 ADT and HCA DT for the project location as shown on the map on page 2.

The transmittal contains two alternate designs. Alternate A assumes that an east-west expressway (the Northern Route) will be completed. Alternate B does not include the Northern Route. For each segment numbered on the map on page 3, alternate A, the standard tabulation is on pages 4 through 9. For each segment numbered on the map on page 10, alternate B, the standard tabulation is on pages 11 through 16.

Segment 42 on the page 3 Map has the highest 1990 ADT on the project area. This segment has an estimated 1966 ADT of 25000 vehicles.

The basic data, method and assumptions are on page 17.

CD

*Leon F. Bergmann*

STATE OF MINNESOTA  
DEPARTMENT OF HIGHWAYS  
WORK MAP



## TRAFFIC ESTIMATE DATA

DESIGN YEAR 1990 PART 1 OF 6

FOR

T.H. 51 S.P. 6215, 6216 LENGTH - MILES  
COUNTY Ramsey LOCATION TH 94 to TH 36

BASED ON

1990 ADT FROM TRAFFIC ANALYSIS UNIT

SHOWING

TOTAL ADT ON SEGMENTS 1 THROUGH 11 AS

DEFINED ON ATTACHED INDEX MAP for Alternate A on page 3.

VEHICLE # TYPE	SEGMENT NUMBER										
	1	2	3	4	5	6	7	8	9	10	11
0	31767	7770	65851	50311	1263	7007	64325	35641	32233	29307	26733
1	844	202	2639	2235	22	200	2635	944	950	1140	926
2	132	31	987	925	3	35	995	146	148	340	298
3	68	13	350	324	-	16	356	82	82	145	131
4	106	23	495	449	1	24	497	118	118	182	158
5	473	109	1132	914	6	113	1140	527	527	456	340
6	310	52	1346	1242	5	55	1352	342	342	430	414
TOTAL ADT	33700	8200	72800	56400	1300	7450	71300	37800	34400	32000	29000
TOTAL H. COMM. ADT	1933	430	6949	6089	37	443	6975	2159	2167	2693	2267
TOTAL DHV											
DIRECTIONAL DISTRIBUTION											

## \* VEHICLE TYPE CODE

0 = PASSENGER CARS AND 4 TIRE TRUCKS  
 1 = SINGLE UNIT-2 AXLE-6 TIRE TRUCKS  
 2 = SINGLE UNIT-3 AXLE TRUCKS  
 3 = TRACTOR-TRUCK OR SEMI-TRAILER- 3 AXLES  
 4 = TRACTOR-TRUCK OR SEMI-TRAILER - 4 AXLES  
 5 = TRACTOR-TRUCK OR SEMI-TRAILER - 5 AXLES  
 6 = BUSES AND TRUCKS WITH TRAILERS

## TRAFFIC ESTIMATE DATA

DESIGN YEAR 1990 PART 2 OF 6

FOR

T.H. 51 S.P. 6215, 6216 LENGTH - MILES  
COUNTY Ramsey LOCATION TH 94 to TH 36

BASED ON

1990 ADT FROM TRAFFIC ANALYSIS UNIT

SHOWING

TOTAL ADT ON SEGMENTS 12 THROUGH 22 AS

DEFINED ON ATTACHED INDEX MAP for Alternate A on page 3.

VEHICLE # TYPE	SEGMENT NUMBER										
	12	13	14	15	16	17	18	19	20	21	22
0	27071	8815	9612	28162	808	4690	4208	7192	9694	34962	4348
1	632	290	296	698	21	130	119	190	250	894	170
2	82	62	59	95	7	48	45	70	92	171	58
3	64	30	29	71	-	14	15	21	28	101	18
4	74	38	37	83	2	26	24	38	50	127	28
5	363	67	69	373	8	66	66	100	134	489	60
6	314	98	98	318	4	26	23	39	52	356	18
TOTAL ADT	28600	9400	10200	29800	850	5000	4500	7650	10300	37100	4700
TOTAL H. COMM. ADT	1529	585	588	1638	42	310	292	458	606	2138	352
TOTAL DHV											
DIRECTIONAL DISTRIBUTION											

## \* VEHICLE TYPE CODE

0 = PASSENGER CARS AND 4 TIRE TRUCKS  
 1 = SINGLE UNIT-2 AXLE-6 TIRE TRUCKS  
 2 = SINGLE UNIT-3 AXLE TRUCKS  
 3 = TRACTOR-TRUCK OR SEMI-TRAILER- 3 AXLES  
 4 = TRACTOR-TRUCK OR SEMI-TRAILER - 4 AXLES  
 5 = TRACTOR-TRUCK OR SEMI-TRAILER - 5 AXLES  
 6 = BUSES AND TRUCKS WITH TRAILERS



## TRAFFIC ESTIMATE DATA

DESIGN YEAR 1990 PART 3 OF 6

FOR

T.H. 51 S.P. 6215, 6216 LENGTH - MILES  
COUNTY Ramsey LOCATION TH 94 to TH 36

BASED ON

1990 ADT FROM TRAFFIC ANALYSIS UNIT

SHOWING

TOTAL ADT ON SEGMENTS 23 THROUGH 33 AS

DEFINED ON ATTACHED INDEX MAP for Alternate A on page 3.

VEHICLE # TYPE	SEGMENT NUMBER										
	23	24	25	26	27	28	29	30	31	32	33
0	875	1014	4974	34684	2058	36986	44964	7369	45306	2924	17908
1	36	41	204	884	60	1420	1596	180	1124	72	450
2	13	14	72	169	12	590	626	36	217	26	382
3	4	4	22	101	6	134	158	22	133	7	58
4	6	8	36	123	8	240	268	26	159	11	96
5	12	15	70	483	33	620	720	103	623	34	214
6	4	4	22	356	23	210	268	64	438	26	292
TOTAL ADT	9500	1100	5400	36800	2200	40200	48600	7800	48000	3100	19400
TOTAL H. COMM. ADT	75	86	426	2116	142	3214	3636	431	2694	176	1492
TOTAL DHV											
DIRECTIONAL DISTRIBUTION											

## \* VEHICLE TYPE CODE

0 = PASSENGER CARS AND 4 TIRE TRUCKS  
 1 = SINGLE UNIT-2 AXLE-6 TIRE TRUCKS  
 2 = SINGLE UNIT-3 AXLE TRUCKS  
 3 = TRACTOR-TRUCK OR SEMI-TRAILER- 3 AXLES  
 4 = TRACTOR-TRUCK OR SEMI-TRAILER - 4 AXLES  
 5 = TRACTOR-TRUCK OR SEMI-TRAILER - 5 AXLES  
 6 = BUSES AND TRUCKS WITH TRAILERS

## TRAFFIC ESTIMATE DATA

DESIGN YEAR 1990 PART 4 OF 6

FOR

T.H. 51 S.P. 6215, 6216 LENGTH - MILES  
COUNTY Ramsey LOCATION TH 94 to TH 36

BASED ON

1990 ADT FROM TRAFFIC ANALYSIS UNIT

SHOWING

TOTAL ADT ON SEGMENTS 34 THROUGH 44 AS

DEFINED ON ATTACHED INDEX MAP for Alternate A on page 3.

VEHICLE # TYPE	SEGMENT NUMBER										
	34	35	36	37	38	39	40	41	42	43	44
0	9902	4395	48248	740	5598	47870	748	3230	48632	2895	47954
1	230	112	1204	20	142	1182	18	64	1196	48	1186
2	98	54	273	12	16	273	10	30	281	17	277
3	26	13	145	4	4	145	4	10	147	2	147
4	46	22	181	8	12	181	7	19	185	5	184
5	112	55	665	12	20	665	11	31	673	20	669
6	1186	49	484	4	8	484	2	16	486	13	483
TOTAL ADT	10600	4700	51200	800	5800	50800	800	3400	51600	3000	50900
TOTAL H. COMM. ADT	698	305	2952	60	202	2930	52	170	2968	105	2946
TOTAL DHV											
DIRECTIONAL DISTRIBUTION											

## \* VEHICLE TYPE CODE

0 = PASSENGER CARS AND 4 TIRE TRUCKS  
 1 = SINGLE UNIT-2 AXLE-6 TIRE TRUCKS  
 2 = SINGLE UNIT-3 AXLE TRUCKS  
 3 = TRACTOR-TRUCK OR SEMI-TRAILER- 3 AXLES  
 4 = TRACTOR-TRUCK OR SEMI-TRAILER - 4 AXLES  
 5 = TRACTOR-TRUCK OR SEMI-TRAILER - 5 AXLES  
 6 = BUSES AND TRUCKS WITH TRAILERS



## TRAFFIC ESTIMATE DATA

DESIGN YEAR 1990 PART 5 OF 6

FOR

T.H. 51 S.P. 6215, 6216 LENGTH - MILES  
COUNTY Ramsey LOCATION TH 94 to TH 36

BASED ON

1990 ADT FROM TRAFFIC ANALYSIS UNIT

SHOWING

TOTAL ADT ON SEGMENTS 45 THROUGH 55 AS

DEFINED ON ATTACHED INDEX MAP for Alternate A on page 3.

VEHICLE # TYPE	SEGMENT NUMBER										
	45	46	47	48	49	50	51	52	53	54	55
0	7612	32730	16594	18250	1489	35708	5364	5629	3893	27922	4910
1	190	806	520	578	32	870	102	125	107	656	104
2	36	205	72	90	6	217	28	31	14	189	13
3	26	95	46	56	2	99	16	18	5	89	8
4	32	120	54	72	4	128	22	23	12	104	13
5	80	509	144	184	12	533	46	50	29	475	30
6	124	235	70	170	5	245	22	24	40	165	22
TOTAL ADT	8100	34700	17500	19400	1550	37800	5600	5900	4100	29600	5100
TOTAL H. COMM. ADT	488	1970	906	1150	61	2092	236	271	207	1678	190
TOTAL DHV											
DIRECTIONAL DISTRIBUTION											

## \* VEHICLE TYPE CODE

0 = PASSENGER CARS AND 4 TIRE TRUCKS  
 1 = SINGLE UNIT-2 AXLE-6 TIRE TRUCKS  
 2 = SINGLE UNIT-3 AXLE TRUCKS  
 3 = TRACTOR-TRUCK OR SEMI-TRAILER- 3 AXLES  
 4 = TRACTOR-TRUCK OR SEMI-TRAILER - 4 AXLES  
 5 = TRACTOR-TRUCK OR SEMI-TRAILER - 5 AXLES  
 6 = BUSES AND TRUCKS WITH TRAILERS

## TRAFFIC ESTIMATE DATA

DESIGN YEAR 1990 PART 6 OF 6

FOR

T.H. 51 S.P. 6215, 6216 LENGTH - MILES  
COUNTY Ramsey LOCATION TH 94 to TH 36

BASED ON

1990 ADT FROM TRAFFIC ANALYSIS UNIT

SHOWING

TOTAL ADT ON SEGMENTS 56 THROUGH 65 AS

DEFINED ON ATTACHED INDEX MAP for Alternate A on page 3.

VEHICLE # TYPE	SEGMENT NUMBER										
	56	57	58	59	60	61	62	63	64	65	
0	4209	9531	37742	2464	3637	55322	56254	3085	2378	36466	
1	114	286	864	57	62	1298	1264	76	54	886	
2	16	36	215	14	17	412	386	26	10	225	
3	5	13	105	6	9	158	148	14	6	115	
4	13	30	130	9	10	448	412	27	8	162	
5	26	66	535	36	46	1064	1036	56	32	547	
6	17	38	209	14	19	298	300	16	12	199	
TOTAL ADT	4400	10000	39800	2600	3800	59000	59800	3300	2500	38600	
TOTAL H. COMM. ADT	191	469	2058	136	163	3678	3546	215	122	2134	
TOTAL DHV											
DIRECTIONAL DISTRIBUTION											

## \* VEHICLE TYPE CODE

0 = PASSENGER CARS AND 4 TIRE TRUCKS  
 1 = SINGLE UNIT-2 AXLE-6 TIRE TRUCKS  
 2 = SINGLE UNIT-3 AXLE TRUCKS  
 3 = TRACTOR-TRUCK OR SEMI-TRAILER- 3 AXLES  
 4 = TRACTOR-TRUCK OR SEMI-TRAILER - 4 AXLES  
 5 = TRACTOR-TRUCK OR SEMI-TRAILER - 5 AXLES  
 6 = BUSES AND TRUCKS WITH TRAILERS



## TRAFFIC ESTIMATE DATA

DESIGN YEAR 1990 PART 1 OF 6

FOR

T.H. 51 S.P. 6215, 6216 LENGTH - MILES  
COUNTY Ramsey LOCATION TH 94 to TH 36

BASED ON

1990 ADT FROM TRAFFIC ANALYSIS UNIT

SHOWING

TOTAL ADT ON SEGMENTS 1 THROUGH 11 AS

DEFINED ON ATTACHED INDEX MAP for Alternate B on page 10.

VEHICLE * TYPE	SEGMENT NUMBER										
	1	2	3	4	5	6	7	8	9	10	11
0	31767	77070	7578	61914	1263	7101	76116	35069	31661	30603	28029
1	844	3090	198	2694	22	204	3102	928	934	1190	976
2	132	1150	30	1090	3	35	1160	144	146	1353	311
3	68	410	13	384	-	16	416	82	82	1152	138
4	106	578	23	532	1	24	580	118	118	192	168
5	473	1322	107	1108	6	114	1336	521	521	470	354
6	310	1580	51	1478	5	56	1590	338	338	440	424
TOTAL ADT	33700	85200	8000	69200	1300	7550	84300	37200	33800	33400	30400
TOTAL H. COMM. ADT	1933	8130	422	7286	37	449	8184	2131	2139	2797	2371
TOTAL DHV											
DIRECTIONAL DISTRIBUTION											

## \* VEHICLE TYPE CODE

0 = PASSENGER CARS AND 4 TIRE TRUCKS  
 1 = SINGLE UNIT-2 AXLE-6 TIRE TRUCKS  
 2 = SINGLE UNIT-3 AXLE TRUCKS  
 3 = TRACTOR-TRUCK OR SEMI-TRAILER- 3 AXLES  
 4 = TRACTOR-TRUCK OR SEMI-TRAILER - 4 AXLES  
 5 = TRACTOR-TRUCK OR SEMI-TRAILER - 5 AXLES  
 6 = BUSES AND TRUCKS WITH TRAILERS

## TRAFFIC ESTIMATE DATA

DESIGN YEAR 1990 PART 2 OF 6

FOR

T.H. 51 S.P. 6215, 6216 LENGTH - MILES  
COUNTY Ramsey LOCATION TH 94 to TH 36

BASED ON

1990 ADT FROM TRAFFIC ANALYSIS UNIT

SHOWING

TOTAL ADT ON SEGMENTS 12 THROUGH 22 AS

DEFINED ON ATTACHED INDEX MAP for Alternate B on page 10.

VEHICLE * TYPE	SEGMENT NUMBER										
	12	13	14	15	16	17	18	19	20	21	22
0	26499	8815	9612	27590	808	4208	4690	7192	9542	9694	34390
1	616	290	296	682	21	119	130	190	251	250	878
2	80	62	59	93	7	45	48	70	93	92	169
3	64	30	29	71	-	15	14	21	28	28	101
4	74	38	37	83	2	24	26	38	50	50	127
5	357	67	69	367	8	66	66	100	134	134	483
6	310	98	98	314	4	23	26	39	52	52	352
TOTAL ADT	28000	9400	10200	29200	850	4500	5000	7650	10150	10300	36500
TOTAL H. COMM. ADT	1501	585	588	1610	42	292	310	458	608	606	2110
TOTAL DHV											
DIRECTIONAL DISTRIBUTION											

## \* VEHICLE TYPE CODE

0 = PASSENGER CARS AND 4 TIRE TRUCKS  
 1 = SINGLE UNIT-2 AXLE-6 TIRE TRUCKS  
 2 = SINGLE UNIT-3 AXLE TRUCKS  
 3 = TRACTOR-TRUCK OR SEMI-TRAILER- 3 AXLES  
 4 = TRACTOR-TRUCK OR SEMI-TRAILER - 4 AXLES  
 5 = TRACTOR-TRUCK OR SEMI-TRAILER - 5 AXLES  
 6 = BUSES AND TRUCKS WITH TRAILERS



## TRAFFIC ESTIMATE DATA

DESIGN YEAR 1990 PART 3 OF 6

FOR

T.H. 51 S.P. 6215, 6216 LENGTH - MILES  
COUNTY Ramsey LOCATION TH 94 to TH 36

BASED ON

1990 ADT FROM TRAFFIC ANALYSIS UNIT

SHOWING

TOTAL ADT ON SEGMENTS 23 THROUGH 33 AS  
DEFINED ON ATTACHED INDEX MAP for Alternate B on page 10.

VEHICLE # TYPE	SEGMENT NUMBER										
	23	24	25	26	27	28	29	30	31	32	33
0	6114	1847	1243	6722	31904	35598	4327	26944	27300	16336	4395
1	238	74	51	276	776	924	111	702	710	392	112
2	78	26	17	96	135	187	42	103	302	158	54
3	24	8	5	30	91	107	11	85	82	42	13
4	38	12	10	50	107	131	18	95	152	88	22
5	84	25	18	94	447	497	50	397	312	178	55
6	24	8	6	32	340	356	41	274	342	206	49
TOTAL ADT	6600	2000	1350	7300	33800	37800	4600	28600	29200	17400	4700
TOTAL H. COMM. ADT	486	153	107	578	1896	2202	273	1656	1900	1064	305
TOTAL DHV											
DIRECTIONAL DISTRIBUTION											

## \* VEHICLE TYPE CODE

0 = PASSENGER CARS AND 4 TIRE TRUCKS  
 1 = SINGLE UNIT-2 AXLE-6 TIRE TRUCKS  
 2 = SINGLE UNIT-3 AXLE TRUCKS  
 3 = TRACTOR-TRUCK OR SEMI-TRAILER- 3 AXLES  
 4 = TRACTOR-TRUCK OR SEMI-TRAILER - 4 AXLES  
 5 = TRACTOR-TRUCK OR SEMI-TRAILER - 5 AXLES  
 6 = BUSES AND TRUCKS WITH TRAILERS

## TRAFFIC ESTIMATE DATA

DESIGN YEAR 1990 PART 4 OF 6

FOR

T.H. 51 S.P. 6215, 6216 LENGTH - MILES  
COUNTY Ramsey LOCATION TH 94 to TH 36

BASED ON

1990 ADT FROM TRAFFIC ANALYSIS UNIT

SHOWING

TOTAL ADT ON SEGMENTS 34 THROUGH 44 AS  
DEFINED ON ATTACHED INDEX MAP for Alternate B on page 10.

VEHICLE # TYPE	SEGMENT NUMBER										
	34	35	36	37	38	39	40	41	42	43	44
0	35734	3836	8694	35356	748	3230	36118	2895	35440	5900	23640
1	926	84	206	904	18	64	918	48	908	158	592
2	211	22	26	211	10	30	219	17	215	30	155
3	111	10	10	111	4	10	113	2	113	22	69
4	139	16	20	139	7	19	143	5	142	26	90
5	507	24	32	507	11	31	515	20	511	66	379
6	372	8	12	372	2	16	374	13	371	98	175
TOTAL ADT	38000	4000	9000	37600	800	3400	38400	3000	37700	6300	25100
TOTAL H. COMM. ADT	2266	164	306	2244	52	170	2282	105	2260	400	1460
TOTAL DHV											
DIRECTIONAL DISTRIBUTION											

## \* VEHICLE TYPE CODE

0 = PASSENGER CARS AND 4 TIRE TRUCKS  
 1 = SINGLE UNIT-2 AXLE-6 TIRE TRUCKS  
 2 = SINGLE UNIT-3 AXLE TRUCKS  
 3 = TRACTOR-TRUCK OR SEMI-TRAILER- 3 AXLES  
 4 = TRACTOR-TRUCK OR SEMI-TRAILER - 4 AXLES  
 5 = TRACTOR-TRUCK OR SEMI-TRAILER - 5 AXLES  
 6 = BUSES AND TRUCKS WITH TRAILERS



## TRAFFIC ESTIMATE DATA

DESIGN YEAR 1990 PART 5 OF 6

FOR

T.H. 51 S.P. 6215, 6216 LENGTH - MILES  
COUNTY Ramsey LOCATION TH 94 to TH 36

BASED ON

1990 ADT FROM TRAFFIC ANALYSIS UNIT

SHOWING

TOTAL ADT ON SEGMENTS 45 THROUGH 55 AS  
DEFINED ON ATTACHED INDEX MAP FOR ALTERNATE B ON PAGE 10.

VEHICLE # TYPE	SEGMENT NUMBER										
	45	46	47	48	49	50	51	52	53	54	55
0	17342	21538	1489	26618	4408	5629	2659	21300	4910	5738	10485
1	538	658	32	656	84	125	73	510	104	156	314
2	82	90	6	167	24	31	10	147	13	22	40
3	50	62	2	73	12	18	3	67	8	7	14
4	61	78	4	98	16	23	8	82	13	18	33
5	155	198	12	403	38	50	20	363	30	36	72
6	72	176	5	185	18	24	27	131	22	23	42
TOTAL ADT	18300	22800	1550	28200	4600	5900	2800	22600	5100	6000	11000
TOTAL H. COMM. ADT	958	1262	61	1582	192	271	141	1300	190	262	515
TOTAL DHV											
DIRECTIONAL DISTRIBUTION											

## \* VEHICLE TYPE CODE

0 = PASSENGER CARS AND 4 TIRE TRUCKS  
 1 = SINGLE UNIT-2 AXLE-6 TIRE TRUCKS  
 2 = SINGLE UNIT-3 AXLE TRUCKS  
 3 = TRACTOR-TRUCK OR SEMI-TRAILER- 3 AXLES  
 4 = TRACTOR-TRUCK OR SEMI-TRAILER - 4 AXLES  
 5 = TRACTOR-TRUCK OR SEMI-TRAILER - 5 AXLES  
 6 = BUSES AND TRUCKS WITH TRAILERS

## TRAFFIC ESTIMATE DATA

DESIGN YEAR 1990 PART 6 OF 6

FOR

T.H. 51 S.P. 6215, 6216 LENGTH - MILES  
COUNTY Ramsey LOCATION TH 94 to TH 36

BASED ON

1990 ADT FROM TRAFFIC ANALYSIS UNIT

SHOWING

TOTAL ADT ON SEGMENTS 56 THROUGH 63 AS  
DEFINED ON ATTACHED INDEX MAP for Alternate B on page 10.

VEHICLE # TYPE	SEGMENT NUMBER										
	56	57	58	59	60	61	62	63			
0	31120	2560	64190	3233	3637	3085	66640	31362			
1	718	59	1520	74	62	76	1522	776			
2	173	15	504	14	17	26	484	189			
3	83	6	224	8	9	14	218	97			
4	108	9	568	11	10	27	538	146			
5	423	37	1250	44	46	56	1244	457			
6	175	14	344	16	19	16	354	173			
TOTAL ADT	32800	2700	68600	3400	3800	3300	71000	33200			
TOTAL H. COMM. ADT	1680	140	4410	167	163	215	4360	1838			
TOTAL DHV											
DIRECTIONAL DISTRIBUTION											

## \* VEHICLE TYPE CODE

0 = PASSENGER CARS AND 4 TIRE TRUCKS  
 1 = SINGLE UNIT-2 AXLE-6 TIRE TRUCKS  
 2 = SINGLE UNIT-3 AXLE TRUCKS  
 3 = TRACTOR-TRUCK OR SEMI-TRAILER- 3 AXLES  
 4 = TRACTOR-TRUCK OR SEMI-TRAILER - 4 AXLES  
 5 = TRACTOR-TRUCK OR SEMI-TRAILER - 5 AXLES  
 6 = BUSES AND TRUCKS WITH TRAILERS



#### Basic Data, Method and Assumptions

The 1990 ADT and DHV for the project were transmitted in TAS 553-14 on July 8, 1968. These volumes were based on the 1985 System 14 computer traffic assignment.

The total heavy commercial volumes were determined by the System 14 computer assignment of 1985 HCADT and adjusted to 1990 HCADT.

Vehicle classification counts which have been recorded in the study area were adjusted to 1990 values by use of a vehicle type trend study. The resulting 1990 values were used to distribute the System 14 HCADT by vehicle type on the two alternates.